

I CLAIM:

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1. A method of managing a logical allocation of resources between connection-oriented traffic and connectionless traffic being routed through a shared physical network element of a communications network, the method comprising the steps of:
 - a) determining a resource requirement of the connection-oriented traffic;
 - b) dynamically adjusting a respective connectionless traffic metric based on the determined resource requirement of the connection-oriented traffic.
 2. A method as claimed in claim 1, wherein the connection-oriented traffic comprises multi-protocol label switched (MPLS) traffic.
 3. A method as claimed in claim 2, wherein the step of determining the resource requirement of the connection-oriented traffic comprises the steps of:
 - a) receiving MPLS reservation requests in respect of the shared physical network element; and
 - b) dynamically adjusting a total amount of resources required to satisfy the received MPLS reservation requests.
 4. A method as claimed in claim 1, wherein the connectionless traffic comprises internet protocol (IP) packet traffic.
 5. A method as claimed in claim 4, wherein routing of the connectionless traffic is controlled using an

interior gateway protocol (IGP) routing system adapted to calculate a shortest path route of the connectionless traffic through the communications network, the shortest path routing being based on a respective metric of each physical network element forming the network.

6. A method as claimed in claim 5, wherein the step of dynamically adjusting the respective metric comprises the steps of:

- a) increasing the respective metric as the determined resource requirement of the connection-oriented traffic increases; and
- b) decreasing the respective metric as the determined resource requirement of the connection-oriented traffic decreases.

7. A method as claimed in claim 5, wherein the respective metric is a link distance vector associated with a respective link connected to a node of the communications network.

8. A method as claimed in claim 7, wherein the step of dynamically adjusting the respective metric comprises the steps of:

- a) determining an updated value of the link distance vector; and
- b) updating a mapping table maintained by the node with the updated value of the link distance vector.

9. A method as claimed in claim 8, wherein the step of determining an updated value of the link distance

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13. A method as claimed in claim 12, wherein the step of determining an updated value of the link cost factor comprises a step of querying a resource allocation table comprising a plurality of characteristic resource allocation values and a respective link cost factor value corresponding to each characteristic resource allocation value.
14. A method as claimed in claim 13, wherein the step of querying the resource allocation table comprises the steps of:
- a) identifying the characteristic resource allocation value which most closely matches the determined resource requirement of the connection-oriented traffic; and
 - b) selecting the corresponding link cost factor as the updated link cost factor.
15. A shared network element operative within a communications network capable of end-to-end transport of connection-oriented traffic and connectionless traffic through the shared network element, the shared network element comprising:
- a) means for determining a resource requirement of the connection-oriented traffic; and
 - b) means for dynamically adjusting a respective connectionless traffic metric based on the determined resource requirement of the connection-oriented traffic.

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16. A shared network element as claimed in claim 15, wherein the connection-oriented traffic comprises multi-protocol label switched (MPLS) traffic.
17. A shared network element as claimed in claim 16, wherein the means for determining the resource requirement of the connection-oriented traffic comprises:
- a) means for receiving MPLS reservation requests in respect of the shared physical network element; and
 - b) means for dynamically adjusting a total amount of resources required to satisfy the received MPLS reservation requests.
18. A shared network element as claimed in claim 15, wherein the connectionless traffic comprises internet protocol (IP) packet traffic.
19. A shared network element as claimed in claim 18, wherein routing of the connectionless traffic is controlled using an interior gateway protocol (IGP) routing system adapted to calculate a shortest path route of the connectionless traffic through the communications network, the shortest path routing being based on a respective metric of each physical network element forming the network.
20. A shared network element as claimed in claim 19, wherein the means for dynamically adjusting the respective metric comprises means adapted to:

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- a) increase the respective metric as the determined resource requirement of the connection-oriented traffic increases; and
 - b) decrease the respective metric as the determined resource requirement of the connection-oriented traffic decreases.
21. A shared network element as claimed in claim 19, wherein the respective metric is a link distance vector associated with a respective link connected to a node of the communications network.
22. A shared network element as claimed in claim 21, wherein the means for dynamically adjusting the respective metric comprises:
 - a) means for determining an updated value of the link distance vector; and
 - b) means for updating a mapping table maintained by the shared network element with the updated value of the link distance vector.
23. A shared network element as claimed in claim 22, wherein the means for determining an updated value of the link distance vector comprises a resource allocation table comprising a plurality of characteristic resource allocation values and a respective link distance vector value corresponding to each characteristic resource allocation value.
24. A shared network element as claimed in claim 23, further comprising:
 - a) means for identifying the characteristic resource allocation value which most closely matches the

determined resource requirement of the connection-oriented traffic; and

b) means for selecting the corresponding link distance vector as the updated link cost factor.

25. A shared network element as claimed in claim 19, wherein the respective metric is a link cost factor associated with a respective link connected to a node of the communications network.

26. A shared network element as claimed in claim 25, wherein the means for dynamically adjusting the respective metric comprises:

- a) means for determining an updated value of the link cost factor;
- b) means for updating a PATH table maintained by the node with the updated link cost factor value; and
- c) means for propagating a link state packet (LSP) containing the updated link cost factor value to neighboring nodes within the network.

27. A shared network element as claimed in claim 26, wherein the means for determining an updated value of the link cost factor comprises a resource allocation table comprising a plurality of characteristic resource allocation values and a respective link cost factor value corresponding to each characteristic resource allocation value.

28. A shared network element as claimed in claim 27, further comprising:

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